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ABSTRACT

Focusing on the process by which intentions get expressed in written form, this article presents a theory of communicative competence based on the development of the "part-whole" thinking process. Specific topics discussed in the article are: speech act theory; speech act theory and theories stressing the importance of subject cognition; genetic epistemology, creativity, and the writing process; and a theory of creativity and the writing process. Proposals are presented for a research program designed to assess the effects of giving instruction as to the purpose for writing and to investigate how the means to writing are brought into "focal" or "subsidiary" awareness to more effectively realize the writer's intentions. (FL)

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Writing as Intention[1]

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

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Writing as Intention

What is going on in an individual's head while he is writing may reflect his attempts to communicate his purpose for writing. This paper will focus on the process by which intentions get expressed in written form. Several statements follow which upon first reading may seem somewhat contentious:

1. Every human being, including very young children using one word utterances, is capable of communicating his intentions in a relatively unambiguous fashion.

2. Given this communicative competence, the skills required for writing are well-formed very early in development.

3. Adequate writing competence (literate expression) can be achieved when the writer creatively links his intentions (his purpose for writing) to the written product.

I shall endeavour to show in this paper that these statements are valid. Considerable support for the first two statements are provided by Jerome Bruner (1975), John Dore (1977) and James Britton (1977). The main force of this paper is to demonstrate that the third statement is equally valid.

Bruner (1975) states that the young child 'has' intentions and that he can infer intentions in others. He makes this claim based on

the fact that the child can understand the distinctions in the case relations AGENT-ACTION-OBJECT-RECIPIENT. He goes on to claim that, "we may infer intention by the usual criteria of direction, terminal requirements, substitution of means, and persistence". Dore (1977) defines intention by introducing his principle of unequivocal recognizability of communicative intention (CI). He assumes "that most often hearers automatically recognize speakers' CIs in uttering sentences. If this were not the case, then verbal communication would be difficult, if not impossible. Some prima facie arguments in favor of this principle are: (a) hearers respond to most utterance types according to predictable arrays of what can be characterized as "appropriate" responses; (b) occasionally hearers are uncertain of how to respond because the speaker's CI is equivocal to them, in which cases, hearers will typically question speakers about their intentions (I take this to be the exception that proves the rule); and (c) hearers can undo the expected effect of the speaker's CI--for example, to the speaker's request of "Can you pass the salt?", a hearer can reply "Yes, I can" without passing the salt. As this example indicates, more than grammar is involved in conveying and recognizing CIs." James Britton (1977) is in accord with these observations. In his words,

> "it is a fact that speech, a vitally important cultural medium, is voluntarily and spontaneously acquired by children in pursuit of their own intentions. What we are increasingly discovering is that our intentions have the effect of unlocking tacit powers within us. To unlock these powers, we must, in Polanyi's (1969, pp. 144-6) terms, encourage a focal awareness of what it is desired to achieve through language, reserving a subsidiary awareness for the linguistic means of achieving it."

There is some additional evidence from research which supplements this perspective on intention. Sloban and Welsh (1971) found that very young children were capable of producing oral language as complex as that of an adult when they were communicating what they wanted to say. For example, when children intended to say something, they had no trouble finding the words and language structure to express the idea. However, when these same children were asked to imitate equally complex sentence structures, accuracy for copying the sentences indicated that the children's performance was severely degraded.

The significance of the foregoing discussion can be drawn in the following way. I am suggesting that purpose or intention gives direction to action. I want to claim that the child's actions always lead in a nonrandom fashion from problem to solution (from wanting to getting). I also want to agree with Bruner (1975) that the child is not

> "equipped with a 'finished conceptual scheme' for interpreting inter-subjective phenomena--that he 'knows about' sharing experience with another from the start, or knows about another's intentions. Rather, it is to say that the child has the innate capacity to construct such schemata. He does so by interpreting feedback from another as constituting a special class of events--'inter-subjective' events in contrast to other events. And he is greatly aided in this by the existence of systematic intentional (or intention-like!) behavior in the people with whom he comes into contact."

I want to make one final observation before returning to intention and writing. Quite clearly, a conceptual rapprochement is required between the genetic epistemology of Jean Piaget and the more purely action-oriented epistemologies represented, for example, by speech act theory. In my opinion, a good deal of conceptual confusion occurs as a

consequence of the various explanations advanced to account for the nonrandomness of purposeful activity. For example, Piaget (1976) points to a complex interaction between operatory structure and subject activity to account for directed behavior. Speech act theorists (e.g., Dore, 1977) describe the development of situationally produced semantic competence (i.e., sociolinguistically produced consensus meanings) to account for the same behavior. The struggle, it seems to me, turns around whether one wishes to embrace a model which is closed with respect to the acquisition of knowledge, (e.g., limited by the power of the most advanced operatory structure), or whether one wishes to hold to the notion that the acquisition of knowledge is not limited in any formal way, (e.g., that transcendence of old knowledge structures is possible on a continuous basis. I have discussed this issue in some detail elsewhere (Gamlin, 1975). The issue is relevant for this paper since it is necessary to describe intentional behavior to reflect both automatic (innate) and active (voluntary) components. A child both is directed and finds direction. These are not contradictory statements if one adopts a genetic epistemogical framework. Indeed, I want also to demonstrate that this framework is robust with respect to accounting for the observation that children and adults have the potential to create new directions, new modes of expression and epistemologically novel interpretations of their experience. This elaboration of the genetic epistemological framework I discuss below.

To summarize this section of the paper, I should like to suggest that young children have a good deal of practice getting what they want.

Here I subsume Halliday's (1975) instrumental, regulatory, interactional, personal, heuristic and imaginative functions into one action schema. Consequently, children learn about intentionality at least from the point of view of achieving results (products). This early semantic competence is first reflected in speech. I shall turn in the next section to an analysis of speech using a speech act framework and then proceed to show how competence in speech may be reflected later on in writing. I shall suggest that the initial and critical writing skill is being able to translate speech into writing for purposes of pointing to language usage common to both speech and writing, viz., to show how communication can be used intentionally to achieve results.

Speech Act Theory

John Dore (1977) has developed a model of the pragmatics of language use by children, based on speech act theory (Austin, 1962; Searle, 1969, 1975). Dore (1977) has produced an analysis of three-year old children's illucutionary acts based on some 3,000 child utterances. Illocutionary acts are those speech acts which are performed by speakers in producing certain utterances. Illocutionary acts reflect the speaker's intentions. They were distinguished by Austin (1962) from other kinds of acts such as "a locutionary act, which is roughly equivalent to uttering a certain sentence with a certain sense and reference" and "perlocutionary acts: what we bring about or achieve by saying something, such as [the result of] convincing and persuading". Austin is suggesting in this distinction that locutionary acts are a composite of illocutionary and perlocutionary components. In

other words, a locutionary act implies subject awareness of means to achieve effect. However, as Bates (1975) points out, young children may be capable only of illocutionary acts, implying to me, at least, that they may not be fully aware of means. This thesis I find eminently reasonable and I shall return to it below.

Dore's (1977) analysis of illocutionary acts, therefore, deals with children's intentions to use speech in a particular way. They are focused on result, not the means for achieving the result. The force of Dore's analysis is to show that the same illocutionary act (intention) can be accomplished by different grammatical forms--how, for example, an 'action request' can be performed by uttering either, "Close the door" or "Would you mind closing the door?". According to Dore (1977, p. 242),

> "The most striking property shared by sentences and illocutionary acts is that, like the sound-meaning relations in grammar, there is no isomorphic relation between the surface forms of utterances and the communicative intention they convey. Secondly, one relation among illocutionary acts themselves is that different acts seem to share some belief conditions from among a (possibly) universal (but limited) set of relevant belief conditions. Thirdly, illocutionary acts, like sentences, are based upon underlying rules, though the former involve purely social constructs. And finally, contrary to the claims of others, there does not seem to be an infinite set of illocutionary act types, just as the number of sentence types, though large, is not infinite. This last assumption is based upon our observation that children do a limited number of general things when they speak: they give and receive information, get attention and get others to do things for them, express their beliefs and feelings, commit themselves to future acts, establish facts, create fantasies, and communicate humor. Moreover, since acts of different illocutionary values can be used to achieve the same perlocutionary effect, the actual effects of illocutionary acts on hearers are probably more limited than the number of illocutionary act types."

Dore's observations are important for this paper because his analysis suggests that communicative competence develops in response to

sociolinguistic rules. These rules produce competencies which are canonical to use Dore's terminology. That is, these rules produce some basic (and few) illocutionary act types. If this analysis is correct, the essential communicative competencies are well-practiced in speech long before the child is introduced to writing. I want to make the point here that a successful pedagogy of writing can make use of these data. In my opinion, a pedagogy of writing should ellucidate the isomorphisms between acts which achieve communicative effects in speech and acts which achieve similar effects in writing. However, before I turn to more specific suggestions for a pedogogy of writing and for a program of research, it is necessary to point to some limitations of speech act theory. In the next section we turn to a consideration of speech act theory and those theories of human cognition which suggest that the subject plays an active role in constructing his experience.

Speech Act Theory and Theories Stressing the Importance of Subject Cognitions

In my opinion, both the strength and weakness of speech act theory can be found in the sociolinguistic focus it gives to the definition of communicative competence. The theory is strong with respect to localizing the functions of speech in 'language as use', to use Wittgenstein's (1953) phrase. The theory is weak when taken to extreme interpretation. For example, Davidson (1978) states with reference to metaphor use that it (metaphor) is free of cognitive content. In other words, the way metaphor is used resides completely with consensus, the sociolinguistic pressure to interpret the utterance in a conventional

manner. Individual cognition and constructive interpretation is ignored. As Davidson (1978) puts it:

> "Most theories of metaphor assume that metaphors have a cognitive content or meaning that goes beyond the literal meaning of the words. If paraphrase or interpretation is to succeed, so theory goes, it must capture in more literal terms what the metaphor conveys. The content of the metaphor may be too subtle for literal language to express; in that case, paraphrase cannot fully achieve its aim. I argue that there is no cognitive content in a metaphor to be captured, and that it does not help to explain how metaphors work to posit a figurative meaning in addition to the literal. The legitimate role or aim of paraphrase cannot be to convey a content that is not there."

The weakness of this extreme position can be seen in Bernstein's (1972) analysis of communicative competence. An individual using a consensus framework is described as "restricted" or "universalistic" in his style of communication. An individual capable of moving beyond a consensus usage of language is described as "elaborated" or "particularistic" with respect to his communicative competence. Clearly, Bernstein is suggesting that the higher order skills associated with generalization and abstraction lie mainly within the domain of the "elaborated" and hence, at least less consensus-oriented language user. Here, I am using Bernstein's analysis as a bridge to the larger question which turns around how much the subject contributes towards making sense of new experience.

The genetic epistemological framework proposed by Piaget (1970) and the Bransford and Franks (1971) studies have been perhaps the most important seminal investigations of this problem. Bransford, Barclay and Franks (1972) conclude:

> "...the constructive approach argues against the tacit assumption that sentences 'carry meaning'. People carry meanings, and linguistic inputs merely act as cues which people can use to recreate and modify their previous knowledge of the world. What is comprehended and remembered depends on an individual's general knowledge of his environment. If a few words or sentences are sufficient to allow a listener to construct a description of a whole situation, he is doing much more than simply concretizing the linguistic inputs. Instead he now has considerably more information at his disposal than he actually heard. The constructive approach thus argues that the act of comprehension generally involves considerably more than merely recovering or even concretizing the information specified by the input string". And again, "Merely comprehending the information specified in the linguistic inputs is not sufficient to guarantee that a listener understands the implications that a speaker has in mind".

Indeed, these observations are very similar to those reported by Dore (1977). It is not the phenomena which is at issue; rather, what is at issue, is the model used to account for the behavior. I shall return to the question of what constitutes an appropriate model below.

To summarize this section of the paper, I should like to suggest that speech act theory is important for describing the common types of communicative functions that emerge very early in the child's development. The weakness of the theory can be observed in the inadequate treatment of subject cognitions. In particular, I am referring to the theory's inability to come to terms with Piaget's (1970) notion of "reflective abstraction". In other words, speech act theory cannot explain how an individual goes beyond current consensus reality to establish new or at least different interpretations of experience. In the next section of the paper I shall demonstrate that even Piaget's genetic epistomological framework cannot provide an

adequate description of the writing process. I shall suggest that this is the case because this particular genetic epistemological theory does not yield an adequate theory of creativity. I want to suggest that the problem for adequately describing writing as a process becomes one of adequately describing the creative process. I want to suggest that realizing one's intentions in writing is analogous to being creative in problem solving. I want to go on to claim that it requires an act of creation to link intention to writing. Although there is no question that an adequate description of the creative process is as yet largely unfulfilled, I want to claim that this is exactly the heart of the problem.

Genetic Epistemology, Creativity and the Writing Process

These issues require considerable discussion as I have demonstrated elsewhere (Gamlin, 1975). This paper presents a more general introduction to the problem with proposed solutions that would emerge more clearly with extended treatment of the issues. My main effort in this discussion is to unpack Polanyi's (1969) concept of tacit knowledge. In my opinion, we are not likely to make much progress in our understanding of the writing process until we take Polanyi's distinction between focal and subsidiary awareness more fully into account. I choose to make this distinction using the words voluntary and automatic. There is a sense in which the operator or subject is behaving automatically in that he cannot specify the means by which he satisfies his intention but another sense in which he is acting voluntarily in that those means are at the service of his purposes or intentions. I want to suggest in

this paper that the subsidiary or automatic aspects of awareness are directed by the focal and voluntary functions of awareness corresponding to purpose or intention.

I have investigated these distinctions (Gamlin, 1975) choosing as focus what I have called the foreknowledge problem. Plato provided the first treatment of the problem in his famous paradox. Plato's paradox, simply stated, asserts that we must be ignorant of a thing before we can be said to acquire knowledge of it, but, if we were ignorant of it, we would not be able to recognize it as that which we were seeking. Polanyi (1967) approaches this problem by making a distinction between explicit and tacit knowledge. Plato's paradox arises from the assumption that all knowledge is explicit but, granted that our explicit knowledge rests always upon a tacit framework, it follows that we can have a tacit foreknowledge of yet undiscovered things:

> The pursuit of discovery is conducted from the start in these terms; all the time we are guided by sensing the presence of a hidden reality towards which our clues are pointing; and the discovery which terminates and satisfies this pursuit is still sustained by the same vision. It claims to have made contact with reality: a reality which, being real, may yet reveal itself to future eyes in an indefinite range of unexpected manifestations. (Polanyi, 1967, p. 24.)

Polanyi's description of the discovery process and his attempted resolution of the foreknowledge problem point inexorably to the literature on creativity. With particular reference to the stage of incubation (Wallas, 1926) it would appear that the "Magic Synthesis' (Arieti, 1976) occurs in response to an amalgam of subsidiary and focal awareness. Even more important, however, is the implication that focal awareness and voluntary acts do not account for all of how activity is

directed. I believe it is true that the subsidiary or automatic aspects of awareness are directed by the focal and vuluntary functions of awareness corresponding to purpose or intention. However, I also believe, in agreement with Polanyi and the literature on creativity (e.g., Taylor and Getzels, 1975) that there is an open-endedness to purpose and intention that is carried to use Polanyi's words in "a reality which, being real, may yet reveal itself to future eyes in an indefinite range of unexpected manifestations".

These observations yield a conceptual base from which we may now consider the genetic epistemological theory of Jean Piaget (1970). For the purpose of this paper the most relevant question concerns whether Piaget's theory is open or closed with respect to describing how knowledge is acquired. Put simply, the question inquires as to whether new knowledge is possible beyond the parameters set by the most powerful of Piaget's operatory structures. The answer, according to Piaget (1970) is that his system is closed and that knowledge can emerge only as a function of subject activity within the constraints set by the operatory structures. Piaget (1970, p. 730) is quite specific as to the implications of Gödel's theorem for his theory. It is only in his later work (Piaget, 1976) that he seems to want to give this problem more attention. It is my view that Piaget continues to struggle within a neo-Aristotelian framework and given this perceptive, he cannot totally respond to Polanyi's description of the discovery process and the foreknowledge problem noted above. Nevertheless, the strength of the genetic epistemological framework is the emphasis Piaget gives to the

subject as active operator and co-producer of knowledge. The operatory structures do constrain and thus limit the contributions of subject activity in the epistemological process. However, it still remains the case that Piaget's theory cannot respond to the question as to whether it is possible for individuals to make epistemologically novel interpretations of experience which transcend the parameters set by the most powerful of the operatory structures.

To summarize this section of the paper I am suggesting that in order to understand writing as process it is necessary to understand how the means to writing are directed by purpose or intention. I am suggesting that the means receive only subsidiary awareness while the intention receives focal awareness. Furthermore, I am suggesting that intention is open-ended with respect to goals. It is this latter observation which leads to the conclusion that writing is a manifestation of the creative process. Finally, I am suggesting that the genetic epistemological framework is weak with respect to characterizing this kind of open-endedness. However, this framework is strong with respect to characterizing the importance of subject activity for helping to produce emerging knowledge structures and it also is strong in its descriptions of structures (operatory) which serve to bracket a good deal of what the child comes to understand throughout development.

In the next section I develop a theory of creativity which preserves the strengths of the genetic epistemological framework and speech act theory. I want to show that writing almost always pushes

the writer 'beyond the information given'. Just as with speech, the writer uses symbols to represent what he knows about experience. And just as with speech, the writer makes discoveries that, to use Bernstein's phrases, take him beyond 'universalistic' interpretations and into 'particularistic' or elaborated representations of experience. The writer does indeed re-present experience. It is the process associated with re-presentation through writing that I shall elaborate.

A Theory of Creativity and the Writing Process

Figure 1 shows a theory of creativity which I have more generally called a model of communicative competence. The theory responds to two major concerns. First, it is necessary to unpack a process which is central to several different kinds of cognitive performance. I refer here to the part-whole process. I want to claim that the top-end of this process involves subject awareness that the whole is more than the sum of its parts. Figure 1, therefore, describes a sequence of cognitive skills which when exercised produce this greater awareness. Part-whole functioning has been observed by many investigators of cognitive behavior. For example, Bruner (1975, p. 4) notes:

> If one were to sum up the past decade of work on attention in a few words, it is that attention is a feature-extracting routine in which there is a steady movement back and forth between selected features and wholes. Neisser (1967) has characterized the process as analysis-by-synthesis, a process of positing wholes (topics) to which parts of features or properties may be related and from which the new wholes may be constructed. The predicational rules of natural language are surely a well-adapted vehicle for expressing the results of such attentional processing: topic-comment structure in language permits an easy passage from feature to its context and back, while topicalization provides a ready means for regrouping new sets of features into hypothesized wholes to be used as topics on which to comment.

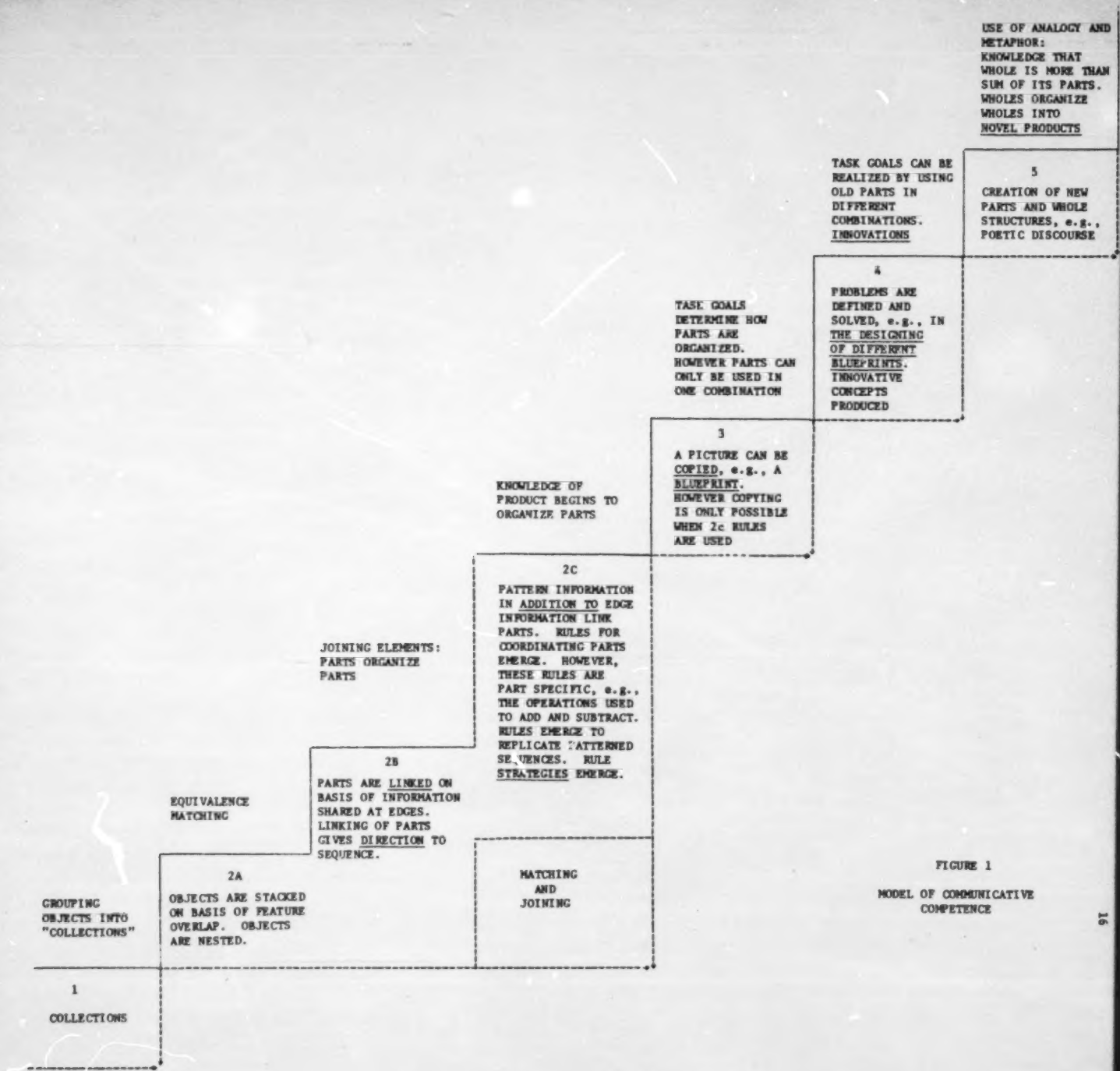
USE OF ANALOGY AND METAPHOR: KNOWLEDGE THAT WHOLE IS MORE THAN SUM OF ITS PARTS. WHOLES ORGANIZE WHOLES INTO NOVEL PRODUCTS
TASK GOALS CAN BE REALIZED BY USING OLD PARTS IN DIFFERENT COMBINATIONS. INNOVATIONS
5
CREATION OF NEW PARTS AND WHOLE STRUCTURES, e.g., POETIC DISCOURSE
4
PROBLEMS ARE DEFINED AND SOLVED, e.g., IN THE DESIGNING OF DIFFERENT BLUEPRINTS. INNOVATIVE CONCEPTS PRODUCED
TASK GOALS DETERMINE HOW PARTS ARE ORGANIZED. HOWEVER PARTS CAN ONLY BE USED IN ONE COMBINATION
3
A PICTURE CAN BE COPIED, e.g., A BLUEPRINT. HOWEVER COPYING IS ONLY POSSIBLE WHEN 2c RULES ARE USED
KNOWLEDGE OF PRODUCT BEGINS TO ORGANIZE PARTS
2C
PATTERN INFORMATION IN ADDITION TO EDGE INFORMATION LINK PARTS. RULES FOR COORDINATING PARTS EMERGE. HOWEVER, THESE RULES ARE PART SPECIFIC, e.g., THE OPERATIONS USED TO ADD AND SUBTRACT. RULES EMERGE TO REPLICATE PATTERNED SEQUENCES. RULE STRATEGIES EMERGE.
JOINING ELEMENTS: PARTS ORGANIZE PARTS
2B
PARTS ARE LINKED ON BASIS OF INFORMATION SHARED AT EDGES. LINKING OF PARTS GIVES DIRECTION TO SEQUENCE.
EQUIVALENCE MATCHING
2A
OBJECTS ARE STACKED ON BASIS OF FEATURE OVERLAP. OBJECTS ARE NESTED.
MATCHING AND JOINING
GROUPING OBJECTS INTO "COLLECTIONS"
1
COLLECTIONS

FIGURE 1

MODEL OF COMMUNICATIVE COMPETENCE

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> Indeed, studies of visual attention by the use of the recording of eye-movements suggest how parallel is the structure of topic-comment in language and in visual inspection. In work by Mackworth & Bruner (1970), where the subjects have the task of identifying a picture emerging from blur, one sees a mixed pattern of large eye-movements (in search of overall integration into a topic or 'subject') and small saccades searching out detailed features for use in checking and commenting. And the language by which subjects report their hypotheses parallels the process so closely that it is hard to resist the impression that one was designed for the other--either in a Whorfian fashion, with scanning reflecting sentence requirements, or in our sense, of language conforming to the processing pattern of perceptual attention. It is worth noting, by the way, that one of the aspects of visual scanning that develops greater flexibility between age five and adulthood is just this deployment of large and small saccades--knowing when to go from part to whole and back.

In my opinion the Gestalt dictum that 'the whole is greater than the sum of its parts' is indeed in part reflected early on in the development of the part-whole process. For example, writing first relates letters to words; later on words to sentences; still later, individual sentences (parts) are related to a whole and this writing is called thematic. Even later in development, however, writing which celebrates the meaning of 'whole' collections of thematic sentences, is called poetic discourse. I want to suggest that this development of the part-whole process is the development of the creative process. To make this point clearer I should like to turn now to the second major concern addressed by the theory. Specifically, I suggest that the use of metaphorical thinking has an ontological consequence. I agree with Paul Ricoeur (1978), for example, that the use of metaphor yields novel representations or re-presentations of experience. According to Ricoeur, it is the development of imagination which when used with metaphorical

expression yields epistemologically new interpretation of experience. For Ricoeur, metaphorical statements have a meaning which cannot be exhaustively paraphrased without semantic loss. It is imagination which "contributes to the construction of the meaning as a new meaning. Imagination completes the meaning of novel metaphors". What does Ricoeur mean by imagination? Ricoeur defines its function in three ways:

> "(1) Imagination (conceived in a Kantian rather than a Humean way) 'schematizes' the emerging meaning by generating insight into the new congruence between 'principle' and 'subsidiary subjects'.
>
> (2) Imagination 'pictures' this emerging meaning by providing images for the concept under which the new relationship between terms is thought.
>
> (3) Imagination provides the kind of 'suspension' (or epoche) thanks to which the reference of our ordinary life collapses and gives way to a second order reference which is the split-reference of poetic discourse."

It seems clear that this is a theory of creativity. It seems equally plausible that the development of 'imagination' as Ricoeur uses the term might be described using the communicative competence model outlined above. In any case, this view of metaphor may be contrasted to those which hold that metaphor has only an aesthetic or rhetorical function. I am suggesting that the use of metaphor in thought has the potential to open-out formal systems like the genetic epistemological theory of Jean Piaget. Consequently, the theory I propose attempts to unpack metaphorical thought into a sequence of underlying cognitive skills. Creative thinking emerges as a function of the exercise of the part-whole process. However, exercise of this process is limited by the part-whole thinking structures currently available to the organism. Therefore, the theory is developmental and it is genetic.

Although I footnote[2] the description of each level in the model, I should like to outline the significance of the model for writing as process. I have suggested earlier that intention directs the means to written expression. Following Polanyi, I have suggested that the means receive subsidiary awareness and that the intent receives focal awareness of what it is desired to achieve through language. Furthermore, I have suggested that intention is open-ended with respect to goals. Therein lies the interface with the developmental model I propose. The part-whole process is essentially a means-end process. Early in development (Figure 1, levels 1-2b), the means receive subsidiary awareness. Intention is focused on ends. Later in development (levels 2c-4) the means and ends receive focal awareness. Means are intentionally coordinated with ends. Finally in development (level 5), both the means and ends receive subsidiary treatment. This occurs at the service of what Arieti (1976) has called the magic synthesis and what I have suggested is the result of metaphorical thought. At this level, intention is open-ended with respect to goals. Nevertheless, it is important to realize that simpler means-end (part-whole) process strategies may continue to be functional even when level 5 communicative competence is available. As Britton (1977) indicates, both Polanyi (1958) and Dixon (1975) show how abstraction can be bought at the cost of decreasing contact with experience. Dixon ". . .goes on to point out how movements up and down this scale [experience-abstraction], within a single conversation or a piece of writing, may set up a kind of dialectic that makes the exploration of experience more subtle and more searching

(Britton, 1977)." I have found Britton's participant, observer distinctions to be extremely important for elaborating this kind of dialectical process. In this connection I think it is also important to point once again to the foreknowledge problem and its implication for the dialectical process.

Ellen Winner and Howard Gardner (1976, 1977) have demonstrated that children as young as three years of age can understand primitive metaphors like 'the river is a snake'. They argue (Winner & Gardner, 1977) that "the appreciation of metaphor will turn out to be integrally related to the capacity to engage in analogic thought. And second, the capacity to appreciate a metaphor, which is ordinarily considered to be merely an aesthetic artifice, will turn out to rest on a strong foundation of real world knowledge". It is a strong claim, indeed, that three year olds are capable of analogic thought but that is exactly the claim I should also like to make qualified only in that the means for analogic thought receive subsidiary and not focal awareness. Young children do employ thinking which foreshadows later development. I want to claim that this 'dialectical' process begins early in development. Even young children notice similarities across very different sematic domains. My own work (Gamlin, 1976), which assesses the child's 'preference' for concrete or abstract paraphrases of proverbs, indicates that children as young as ten years of age are capable of making 'adult' decisions for choosing the 'best' meaning. However, these data also indicate that the means for making these decisions receive only subsidiary awareness. This program of research will reveal when the

dialectical process begins to receive focal awareness. In other words, we shall determine when intentions are realized as a function of voluntary and focal coordination of means and ends. Notice that the dialectical process is the process which yields the re-presentations of experience mentioned earlier. I want to claim that writing is important exactly because it can force upon the operator an awareness (focal) of means-end relationships (force a re-presentation of old experience). I want to make the stronger claim that it is only with adequate exercise of part-whole communicative competencies that writing can serve that purpose. Indeed, I would suggest that illiteracy occurs when writing does not force a focal awareness of means-end relationships. This can occur when there has been inadequate exercise of part-whole communicative competencies. These statements are all empirically testable and I shall return to them in the next section of the paper.

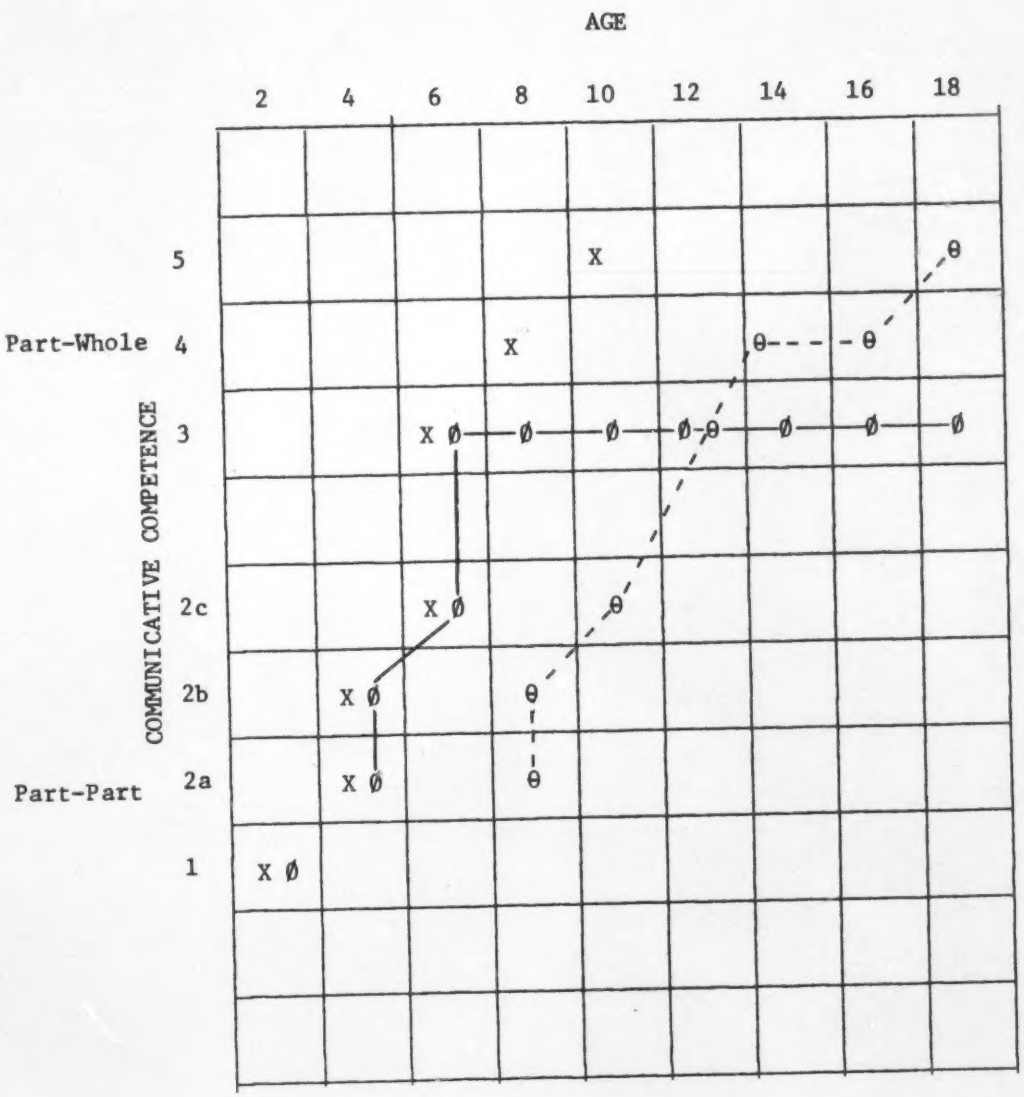
The part-whole model and the dialectical (creative) process have direct implications for speech act theory. The proper analysis for investigating the relationship between these theories would involve procedures similar to those used by Bates (1975) to explore the relationship between speech act theory and Piaget's model of intellectual development. If the child exercises part-whole communicative competence early on, using particular types of speech acts to realize intention, then it makes sense to introduce children to writing by helping them use the same communicative competencies and the same language functions in writing. This kind of analysis has implications for a pedagogy of writing which will be explored in the next section.

In summary, I have described a model of communicative competence based on the development of the part-whole process. I suggested that the model describes the development of creative thought. This claim was justified on the basis that the most advanced part-whole concept is the awareness (focal) that 'the whole is more than the sum of its parts' and that this latter concept, when unpacked, yields a description of the development of metaphorical thought. I argue that the development of metaphorical thought yields epistemologically novel interpretations of experience. I go on to suggest that even young children realize or exercise their communicative competence in a dialectical process that involves using primitive (subsidiary) aspects of analogical thought (primitive metaphors). Finally, I want to claim that writing is a powerful tool in that it can force the dialectical process in the direction of focal awareness to help the operator coordinate means and ends with intentions. I argue that writing performs this function only if the relevant part-whole communicative competencies have been exercised (overlearned) and only if there is intention to begin with. I suggest that the relevant communicative competencies can be discovered by applying a speech act analysis to early child utterances. I want to claim that since the child's first intentions get reflected in speech, these are the very communicative functions that are most exercised and hence ready for translation into writing. The next section of the paper will get down to the specifics of a program of research and a pedagogy of writing.

A Program of Research and a Pedagogy of Writing

First of all, I should indicate that each level of the communicative competence model has been operationally defined to yield rules for locating test materials along the part-whole continuum. Consequently, an assessment procedure has been rendered which produces data showing part-whole competence. Pilot testing has determined that level 5 competence is attained by ages nine or ten. Subjects are at least able to recognize correct answers to analogy and metaphor problems.

Figure 2 shows a paradigmatic example of communicative competence indicated by an X in the cells across age. The O's indicate hypothetical performance profiles for speaking (Ø) and writing (θ). Notice in this paradigmatic description that child utterances are congruent with competence just until writing has traditionally been introduced in schools. The pedagogic implication for this paradigmatic example is that the teaching of writing should occur at least by age six to ensure optimum syncrony between communicative competence and speaking and writing. Notice also that the greatest discrepency occurs between communicative competence and writing. I have in this paper suggested that this large discrepency occurs because children have little sense of the purpose for writing. In addition, the means for producing writing require acts which interfere with the realization of intention. I refer here to the more technical acts associated with writing such as the motor coordinations involved in holding a pencil as well as remembering the various rules for sentence determining (placing of periods), capitalization and so forth. It seems clear that the child's intention



Key

X = Communicative Competence

Ø = Speech performance

θ = Writing performance

Figure 2

to communicate an idea in writing is thwarted in large measure simply because the means for realizing ideas in writing do not remain at subsidiary awareness. I am suggesting that the child must be adequately prepared to bring the means into focal awareness, otherwise the child will not experience the satisfactions associated with achieving the primary purpose of writing--the realization of his intention through language and the consequent development of communicative competence.

Proposal for Study One

The first study I should like to outline responds to the problems associated with introducing a child six or seven years of age to writing. The treatment condition is essentially a commentary on our current thinking about the process of writing. Speech act analyses of child utterances (Dore, 1977) reveal that a large percentage of these utterances are 'action requests'. Although the child makes 'requests' across a broad range of behavior, from commands directed to changing the behavior of others, to requests for information, these kinds of 'requests' give every indication that they are primitive forms of persuading and convincing. Therefore, the treatment condition for study one is directed toward helping the child translate these early speech acts into writing. This translation process will clarify and make explicit the purpose for writing. Specifically, children will be committed to silence, possibly every afternoon for a number of weeks. The only avenue for communication will be through writing. For our purposes writing is defined in two ways. First, writing shall occur when the child can offer some dictation to the

teacher, who may receive the dictation directly or act as intermediary in the passing of notes. The content of the notes is restricted to the domain of 'action requests' which I have suggested may be broadly translated to include acts of persuading and convincing as well as requests for information. The second way writing shall occur is through child manipulation of pre-printed whole words or pre-printed individual letters or both. The child will be given an opportunity each afternoon to construct written discourse falling within the domain of 'action requests'. Initially the child will be shown 'model' examples of 'action request' statements and will also receive feedback with respect to his production. Later on, examples of action request statements will be drawn from the child corpus of written discourse. These activities may be supplemented by the child giving himself dictation via tape recorder and subsequently translating this speech into writing.

I have suggested above that exercise of the writing process is the exercise of the dialectical process, e.g., part-whole communicative competence. Therefore, the dependent measures employed in study one will assess for movement along the part-whole continuum. A pre-posttest paradigm is proposed using as assessment materials a proverb-test normed over several hundred school children of all ages (Gamlin, 1976, 1977). In one condition, the child will be required to read (indeed, this is one of the severe constraints on the study) the proverb (metaphor) and determine which of four paraphrase choices actually mean about the same as the proverb. Additionally, the child is asked which paraphrase is the

'best' meaning. In another condition the child will be read-to and asked to make the same decision. In the third condition, the child will be required to 'write' following the definition of writing described above. In this condition he will be asked to construct the best paraphrase for the proverb. The proverb test assesses the child's ability to descriminate between concrete and abstract paraphrases of the same proverb. In addition it is possible to determine preference for proverb meaning. In this way it is possible to map change in communicative competence. In this connection, a second dependent measure developed as a non-language assessment of communicative competence (levels 1-5), will be obtained using the pre-posttest paradigm. Shift in communicative competence is assessed with respect to development of the part-whole thinking process. ANCOVA analyses will reveal whether amount of training (e.g., number of written constructions) predicts for shift in communicative competence.

Proposal for Study Two

The second study is appropriate for children six, seven, or eight years of age who must still be introduced to writing. Children are helped by moving the means to writing from subsidiary to focal awareness. As I have indicated above, the act of writing stimulates the dialectical part-whole process which in turn moves the child along the communicative competence contiuum. An appropriate pedagogy of writing, exercises just those processes which guarantee this kind of development. Speech act analyses of child utterances yield insights into these critical processes. These analyses strongly suggest that it is the child's

intention which directs the means to communication even though these means are not in focal awareness. Clearly, the realization of intention (application of means) produces a perlocutionary effect in the listener. For example, 'action requests', including persuading, convincing and the soliciting of information all require that the listener attend to the speaker. Bringing the means of writing into focal awareness requires that the writer learn how to discriminate 'intent' (what he wants) from 'means' (what he does) from 'effect' (what his audience does).

The treatment condition in study two requires children to construct written scripts for friends, adults, or some mix of these classes of people, using as written discourse statements from the domain of 'action request'. A similar definition of writing will be used as for the first study. Training will begin by encouraging the children to spontaneously develop scripts around events which require agent-recipient activities. Subsequently, the teacher will use this script corpus to point to the relationship between agent and recipient. The children will then be asked to improvise upon their old scripts. A second teacher function will involve the explicit modeling in scripts of means-end relationships. The teacher will demonstrate how more than one intention can be realized by producing different kinds of effects in the reader. Training children how to discriminate 'intention' from 'effect' from 'means' has pedagogical implications for sensitizing children to an audience.

Dependent measures will include pre-posttest data from the proverbs test described above. As well, the posttest of the non-language

assessment of communicative competence will reveal whether training produced a significant shift on this dimension. In addition, pre-post measures of children's success in constructing and coordinating means-end relationships, can be determined, across different numbers of agent intents and audience effects. ANCOVA analyses will reveal whether the amount of practice constructing means-end relationships contributes significantly to change in communicative competence.

Pilot data (Gamlin, 1977) gathered from grades three and four at the Institute of Child Study indicate that children eight and nine years of age can readily adapt to the kind of instruction recommended for study two. These children watched a filmstrip depicting a moral delemma. They were asked to write a summary of the vignette followed by their solution to the problem. In another condition, children were asked to use their imagination to write a script simulating parent dialogue, outlining the problem and its solution. These stories and scripts were collected, typed, and distributed to different children in their class a week later. The children were asked to rank order the writing, listing the five best and the five worst stories and scripts. These children shifted radically in their style of writing in the process of writing scripts for adults. In almost every case the children's writing became less personal and more objective. They demonstrated more writing for effect, including graffiti types of written discourse (swear words). Interestingly, these children wanted to give all of the written discourse low rankings. These results indicate that the children were easily able to note the discrepancies between their own writing and the kinds of writing that they

actually enjoyed reading. The proposed studies are directed towards reducing this kind of discrepancy.

Proposal for Study Three

The third study is appropriate for children ten, eleven or twelve years of age who have received the exercises described in studies one and two. The purpose of study three is twofold. First, as with studies one and two, exercises are used to bring the means to writing into 'focal' awareness. Second, exercises are introduced which encourage children to use the means to writing at the service of ends or goals. The suggestion made here is that 'means' must shift back and forth from 'focal' to 'subsidiary' awareness for adequate means-end expression to emerge (e.g., as in poetic discourse). The critical writing process for literate expression is precisely described by this oscillation of awareness. The writer functioning at this level of communicative competence (4 and 5) is maximally flexible with respect to focusing on means or ends in order to achieve his intention through language. I shall return to this definition of literacy with respect to a consideration of 'point of utterance' (Britton - personal communication).

In study three the communicative competence model is exercised directly. For example, the child will receive training in analogical and metaphorical thinking. He will be taught those skills (means) in the context of discovering how they can be important for achieving certain ends in writing. For example, the child will be shown how persuading and convincing become more effective when topic-comment (part-whole) distinctions are maintained and expanded as in metaphorical writing.

Likewise, the child will receive training in making part-whole distinctions in the context of poetic discourse. The specific intent of the latter training is to demonstrate that poetic structure is more than the sum of its parts. One treatment will have the child attempt to paraphrase a piece of poetry. The teacher will demonstrate the inability of paraphrase to capture the full meaning of the poem no matter how many paraphrases are attempted. The child will learn that the structure of the poem can not be fragmented, without doing damage to the meaning of the poem as a whole. This training will be supplemented by requiring the child to paraphrase different types of metaphorical sentences (Winner & Gardner, 1976), ranging from physical metaphor through metaphor combining utterances from different semantic domains. These exercises will introduce the child to the mystery of poetic discourse and metaphor, how, for example, it is possible to understand and yet not be able to exhaustively paraphrase the meaning of this body of written discourse. The teacher function at this juncture is to suggest that it is 'tacit' knowledge which is reflected in the comprehension of poetry and metaphor. Recourse to 'explicit' knowledge by using paraphrase cannot convey the full sense of poetry and metaphor in written discourse because this discourse is generated 'tacitly' at the 'point of utterance'. James Britton (personal communication) makes this point very well when he says, "I do not doubt that 'learning' takes place when we turn tacit knowledge into explicit, but I don't think we have any real evidence as to the nature of what is learnt: thus, my hunch would be that turning linguistic rules held tacitly into explicit knowledge would be likely

to make a man a better teacher of writing (for example), but I am not nearly so sure it would make him a better writer." These comments could apply equally well to the pedagogical treatments developed for each of the proposed studies. Perhaps the safest generalization (again to agree with Britton) is that although explicit knowledge cannot substitute for tacit knowledge, it very well may supplement it. These observations clearly complement the central thesis of this paper. That thesis holds that epistemologically novel re-presentations of experience are possible but only possible when the writer is directed by intention. It is the writer's intention which directs either focal or subsidiary awareness to 'means'. It is intention which makes it possible to communicate tacit knowledge at the 'point of utterance'. I want to claim that intention is a manifestation of tacit knowledge; it is the 'leading edge' of tacit knowledge.

The treatment conditions recommended for each of the proposed studies supplement the tacit knowledge base. I suggest that exercise of communicative competence stimulates the part-whole dialectical process which has just the function of supplementing the tacit knowledge base. In this 'dialectic', intention becomes refined (e.g., stimulates either subsidiary or focal awareness of means).

Study three training will be manifested in greater means-end flexibility. Children will be able to bring 'means' into focal awareness for purposes of arguing or persuading. However, they will be able to relegate 'means' to subsidiary awareness for purposes of producing metaphor and poetic discourse.

Summary and Conclusion

A theory of communicative competence has been developed to show how adequate writing competence (literate expression) can be acheived when the writer creatively links his intention (his purpose for writing) to the written product. I have argued that writing can force a part-whole dialectical process which brings to 'focal' awareness the means to writing and in this way supplements the 'tacit' knowledge base. I have suggested that direction is given to the development of communicative competence and the part-whole process by intention which, I have argued, is the 'leading edge' of tacit knowledge. Literate writing is essentially that writing which is open to intention and tacit knowledge. It is this openness which yields epistemologically novel interpretation of experience. It is also this openness which produces 'surprise' or 'ah-ha' (eureka) writing experiences. I contend that it is not until the writer has sampled these kinds of experiences that he is willing to develop the technical skills associated with writing. As Bryant Fillion (1977, p. 14) puts it:

> "Until the student is engaged in using written language to satisfy purposes which he understands and accepts, until he knows what writing is for in terms of his own intentions, he is unlikely to take seriously the demand for technical proficiency..."

The research proposed in this paper is directed toward assessing the effects of giving instruction as to the purpose for writing. This research is also directed toward investigating the process whereby the means to writing are brought into 'focal' and/or 'subsidiary' awareness for purposes of more effectively realizing the writer's intention.

Footnotes

[1]I should like to thank Lauraine Robertson for her many valuable comments throughout the preparation of this paper. I am also grateful to James Britton for his careful reading of an earlier draft of the paper. His ideas have clarified my thinking about writing as process and, in particular, with respect to the significance of 'point of utterance'. I should also like to thank all of the very many people who have participated in the development of the project: Seline Fiksel, Minita Gordon, Roslyn Klaiman, Janis Nitchie, Jane Rodmell, James Wagner, Linda Wilmhurst and Sheila Willson.

[2]The first level in Figure 1 captures what Vygotsky and Piaget have termed graphic or syncretic collections. The child represents experience on the basis of rule systems which are internal and relatively unresponsive to outside demands. At this level we see the child shifting in a rather fluid fashion between grouping objects on the basis of shape, to grouping objects on the basis of colour to grouping objects on the basis of size, using rule systems which primarily reflect literal or concrete perceptions of the world. The second level in Figure 1 is separated into three subsections. This separation is primarily intended to show transition along a continuum of joining behavior. Level 2(a) shows that equivalence matching is a prerequisite skill for joining behavior. Objects are compared on the basis of feature overlap. Level 2(b) shows that significant feature information can be found on the edges of objects. Joining, therefore, becomes an activity which has

direction. Level 2(c) shows that joining behavior demands more than just the use of edge information. The child must try to use more of the available information contained in objects or series of objects. For example, the child must use pattern information or repetitions of same or similar features of information for purposes of determining what event or object could be added next or considered next. Rule strategies emerge to accomplish task demands, e.g., to replicate patterned sequences of information. However, these rules are part specific, e.g., the rules used to add and subtract. It is at level 2(c) that the knowledge of goals begins to determine rule strategies and coordination of parts. Level 3 in the model shows that children are capable of imitating or copying a plan or blueprint. They are capable of using the "whole" to organize the "parts". In levels 1-2(b), the "parts" organize the "parts" irrespective of the whole. In 2(c) we find a transition in respect to the "whole" organizing the "parts". In level 3 the child can copy the whole object and the organization of its parts. However, he can only copy if he uses 2(c) rules. In other words, the child cannot rely entirely on level 2(a) equivalence matching skills. For example, a blueprint is useless (cannot be copied) without some understanding of the principles of mechanics and engineering.

Level 4 describes thinking which for the first time allows the child to innovate, to produce a different product. For example, given a blueprint of a particular house the child is able to go beyond the specific blueprint and is able to innovate upon the concept of the house. The child at this level is not simply producing an object which has no

connection to his previous understanding of what constitutes a house. He is transcending or transforming his previous definitions and concepts of what constitutes a house. His understanding of "house" is modified in the process of achieving the innovation. The person functioning at level 4 brings his past to the present in transformation and within this process produces a different product. Level 4 thinking is problem solving in the traditional sense of problem solving, e.g., old parts are used in different combinations to produce innovative products.

Level 5 represents the final development of the child's ability to understand the part-whole process. He understands that the whole is more than the sum of the parts. At this level, "wholes" organize "wholes". This behavior can be seen most clearly in metaphor and poetic discourse. At level 5 metaphor transcends old experience to create epistemologically novel interpretations of experience. At level 5 the "whole" cannot be fragmented into "parts". James Britton (1977) points to the global structure of poetry and makes exactly this observation. Britton points to the difficulties involved in communicating the gist of a poem to a friend. He observes the difficulty, if not the impossibility of communicating the sense of the poem without recourse to actually reproducing the exact words that were originally used by the poet so as to preserve the thematic structure of the poem in its entirety. At level 5, then, "wholes" remain intact until they are transformed by other "wholes" as in metaphor and poetic discourse.

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